

What is claimed is:

1. A processing equipment comprising:

a vessel having one gas discharge port or more;

5 a substrate holder provided in the vessel to load a substrate thereon; and

a rotating body provided between the substrate holder and a side wall of the vessel to rotate around the substrate holder and having one vent hole or notched vent portion or more;

10 wherein a gas is discharged onto the substrate holder from the gas discharge port when the gas discharge port coincides in position with the vent hole or notched vent portion of the rotating body by rotation control of the rotating body.

15 2. A processing equipment according to claim 1, wherein the one gas discharge port or more are a reaction gas discharge port and a purge gas discharge port.

20 3. A processing equipment according to claim 2, wherein the reaction gas discharge port and the purge gas discharge port are arranged alternately along a periphery of the substrate holder.

25 4. A processing equipment according to claim 1, wherein at least an upper inner surface of the side wall of the vessel has a flat shape or a cone-like shape, an upper outer surface of the rotating body has a flat shape or a cone-like shape in conformity with the flat shape or the cone-like shape of the side wall of the vessel, and a

floating gas discharge port is provided on an inner surface of a flat or cone-shaped side wall of the vessel, and

the rotating body is floated so as to space from an inner surface of the side wall of the vessel by discharging the floating gas.

5. A processing equipment according to claim 4, wherein a plurality of floating gas discharge ports are provided along a circumference of the flat or cone-shaped inner surface of the side wall of the vessel.

6. A processing equipment according to claim 4, wherein an exhaust port is provided on the flat or cone-shaped inner surface of the side wall of the vessel, and the floating gas discharged is exhausted via the exhaust port.

7. A processing equipment according to claim 1, further comprising means for adjusting a pressure of the gas and suppressing a pressure variation of the gas discharged from the gas discharge port.

8. A processing equipment according to claim 1, wherein the substrate holder is supported by a supporting axis, and the substrate holder is rotated upon the supporting axis.

9. A processing equipment according to claim 1, further comprising means for heating the substrate loaded on the substrate holder.

10. A processing equipment according to claim 1,

wherein an exhausting means for reducing a pressure in an inside of the vessel is connected to the vessel.

11. A processing equipment according to claim 1, further comprising a controlling means for adjusting at least any one of a partial pressure of the reaction gas, a partial pressure of the purge gas, a partial pressure of the floating gas, an amount of exhaust in the vessel, a rotating direction of the rotating body, a rotational speed of the rotating body, a total rotation history of the rotating body from a start to an end of a film formation, a rotating direction of the substrate holder, and a rotational speed of the substrate holder.

12. A processing method comprising the steps of:  
arranging one gas discharge port or more, which discharge a gas, around a periphery of a substrate;

preparing a rotating body, which is rotated around the substrate and having one vent hole or notched vent portion therein, between the substrate and the gas discharge port; and

discharging the gas onto the substrate holder when the gas discharge port coincides in position with the vent hole or notched vent portion of the rotating body by rotation control of the rotating body, and thus processing the substrate by the discharged gas.

13. A processing method according to claim 12, wherein the one gas discharge port or more are a reaction gas discharge port and a purge gas discharge port, and

the reaction gas and the purge gas are discharged alternately onto the substrate by the rotation control of the rotating body.

14. A processing method according to claim 12,  
5 wherein one atomic layer or more are formed on the substrate.